

**What is claimed is**

1. An apparatus for selectively moving hydrogen ions in aqueous solution comprising an electrical field generator which switches faster than 1 ms, and a low impedance electrical connection device which introduces said electrical field into a target.
2. The apparatus according to Claim 1, further comprising a monitor of tracing a current signal not from the movement of said hydrogen ions.
3. The apparatus according to Claim 1, wherein said aqueous solution is in an organism.
4. The apparatus according to Claim 1, wherein a pH value is determined by a current supplied from said electrical field generator.
5. The apparatus according to Claim 1, wherein said moving hydrogen ions is used to generate heat.
6. The apparatus according to Claim 1, wherein said electrical field generator comprises generating step field.
7. The apparatus according to Claim 1, wherein said electrical field generator comprises generating alternating field.
8. The apparatus according to Claim 1, wherein said low impedance electrical connection device comprises a plurality of electrodes.
9. The apparatus according to Claim 8, wherein said low impedance electrical connection device comprises at least one smaller-area electrode with a smaller area.

10. The apparatus according to Claim 9, wherein said at least one smaller-area electrode is arranged into said target.

11. The apparatus according to Claim 7, wherein said alternating field comprises a biphasic square wave.

12. The apparatus according to Claim 1, wherein said electrical field comprises frequency above 1 MHz.

13. The apparatus according to Claim 8, wherein said low impedance electrical connection device comprises a plurality of electrode pairs.

14. The apparatus according to Claim 13, wherein the plurality of said electrode pairs generate electrical fields across said target.

15. The apparatus according to Claim 1, wherein said target comprises a tumor.

16. The apparatus according to Claim 1, wherein said target comprises a region of poor blood circulation.

17. The apparatus according to Claim 2, wherein said monitor comprises a device for measuring the variation in said current.

18. The apparatus according to Claim 2, wherein said monitor comprises an ultrasound-generating device.

19. The apparatus according to Claim 14, wherein the plurality of said electrode pairs work at different times.

20. The apparatus according to Claim 14, wherein the plurality of said electrode pairs generate electric fields that add in terms of vector at the

target.

21. The apparatus according to Claim 4, further comprising a calculating system for estimating the possibility of a cancer based on a concentration of the hydrogen ions.

22. The apparatus according to Claim 21, wherein said estimation comprises the determination of positioning said cancer.

23. The apparatus according to Claim 1, wherein said electric field generator comprises a magnetic field generator.

24. The apparatus according to Claim 1, wherein said low impedance connection device comprises low pH ingredient.

25. The apparatus according to Claim 24, wherein said low pH ingredient comprises an organic acid.

26. The apparatus according to Claim 25, wherein said organic acid comprises a lactic acid.

27. The apparatus according to Claim 25, wherein said organic acid comprises an acetic acid.

28. The apparatus according to Claim 1, wherein said the moving of hydrogen ions is used to reduce the viscosity of said solution.

29. The apparatus according to Claim 28, wherein said solution is in a small tube.

30. The apparatus according to Claim 29, wherein said small tube is in an artificial machine.

31. The apparatus according to Claim 30, wherein said small tube is in a microcirculation.

32. The apparatus according to Claim 8, wherein the plurality of said electrodes comprise a temperature sensor.

33. A medium as interface to lower the impedance between a body and an electrode comprising a low pH solution.

34. The medium as claimed in Claim 33, wherein said body comprises a biological fluid.

35. The medium as claimed in Claim 33, wherein said low pH solution comprises an organic acid.

36. The medium as claimed in Claim 35, wherein said organic acid comprises a lactic acid.

37. The medium as claimed in Claim 35, wherein said organic acid comprises an acetic acid.